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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/583,797	05/31/2000	Rosario A. Uceda-Sosa	POU9-2000-0018-US1	9330
46369 7590 10/18/2007 HESLIN ROTHENBERG FARLEY & MESITI P.C. 5 COLUMBIA CIRCLE ALBANY, NY 12203			EXAMINER VO, LILIAN	
			ART UNIT 2195	PAPER NUMBER
			MAIL DATE 10/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/583,797

Applicant(s)

UCEDA-SOSA ET AL.

Examiner

Lilian Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4, 6, 7, 9 - 33, 36 - 47 and 49 - 51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6, 7, 9 - 33, 36 - 47 and 49 - 51 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1, 3, 4, 6, 7, 9 – 33, 36 – 47 and 49 - 51 are pending. Claims 2, 5, 8, 34, 35 and 48 have been cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4, 7, 21, 47 and 49 - 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldstein et al. (US 4,698,752, hereinafter Goldstein) in view of Furlani et al. (US 5,995,998, hereinafter Furlani).
4. Regarding **claim 1**, Goldstein discloses a method of managing the locking of resources of a data repository, said method comprising:

determining whether a relationship between one resource and another resource of a data is a containment-based relationship or whether the relationship is reference-based relationship, wherein a data repository comprises a hierarchical structure of a plurality of resources, said hierarchical structure comprising one or more resources having a reference-based relationship and one or more resources having a containment-based relationship (fig. 5, col. 5 lines 3 – 12: “connect to” or “included in”, col. 8 lines 30 – 34: “used in” or “included in”).

Goldstein discloses the containment-based relationship, which he refers to as “included in”, and the reference base relationship, which he refers to as “connected to” (col. 5 lines 3 – 8 and fig. 5). Goldstein explicitly teaches that the invention solves the problem of avoiding locking the entire database while any user is accessing that database, but only the record being actually accessed can be locked out (col. 1 lines 43 – 68). This is achieved with the aid of a locking graph of the resources wherein the locking algorithm simply walks the locking graph from the locking entry of the accessed resource to each of its roots and to lock each root (col. 7 lines 1 – 35). This information is used by the database manager to rapidly lock out this record and all other records up to and including the record of interest (col. 7 lines 36 – 41). Roots are defined as entries of the tree that include all other records accessible through that record (col. 7 lines 27 – 30). Therefore, the reference determines that a relationship between resources is an “included in” relationship and locks the resource and its root (other resource) accordingly. Goldstein teaches that resources also have a connected to relationship but does not explicitly define the algorithm for its performance. Furlani disclose an object interrelated decision procedure determines whether the lockable object (object of interest) that will be accessed is interrelated to other objects (thereby corresponding to the included in relationship of Goldstein) or whether it is independent of other objects (corresponding to the connected to relationship of Goldstein). This determination is made by examining the group reference pointer field within the lockable object. If the group reference pointer field value does not contain a pointer to the lock object pointer, the lockable object is independent of other objects in the object collection (col. 8 lines 23 – 51). Therefore, it would have been obvious for one of an ordinary skill in the art, at the time the invention was made to incorporate Furlani’s teaching together with Goldstein

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to utilize the lock mechanism as provided by Furlani based on the object interrelationships (Furlani: abstract) and to minimize the overhead involved in placing and detecting data locks (Goldstein: col. 1 lines 66 - 67).

5. Regarding **claim 21**, as modified Goldstein discloses the determining comprises employing a set of policies (Goldstein: col. 5 lines 3 – 12, Furlani: fig. 2B).
6. Regarding **claim 49**, as modified Goldstein discloses the one type of locking strategy comprises a chained locking strategy (Furlani: col 6 line 60 – 62), and the another type of locking comprises a reference-based locking strategy (Furlani: col. 6 line 65 – col 7 line 1).
7. Regarding **claim 50**, as modified Goldstein discloses a containment-based relationship is a relationship in which there is only one reference from the one resource to the another resource (Furlani: fig. 2A).
8. Regarding **claim 51**, as modified Goldstein discloses a reference-based relationship is a relationship in which there is one or more references from the one resource to the another resource (Furlani: 2C and 3).
9. **Claims 4 , 7 and 47** are rejected on the same ground as stated in claims 1 and 21 above.

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10. Claims 3, 6, 9, 10, 22, 23 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldstein et al. (US 4,698,752) in view of Furlani et al. (US 5,995,998), as applied to claims 1, 4 and 7 above, and further in view of Soltis et al (US 6,493,804, hereinafter Soltis),

11. Regarding **claim 3**, as modified Goldstein did not clearly disclose the additional limitation as claimed. Nevertheless, Soltis discloses the locking of said at least one resource is further based on an operation to be performed (abstract, col. 9 lines 42 - 65). Therefore, it would have been obvious for one of an ordinary skill in the art, at the time the invention was made to incorporate as modified Goldstein's teaching together with Soltis to utilize the lock mechanism as provided by Furlani based on the object interrelationships (Furlani: abstract) and to minimize the overhead involved in placing and detecting data locks (Goldstein: col. 1 lines 66 - 67).

12. Regarding **claim 10**, as modified Goldstein discloses the operation comprises at least one of create, delete, read and write (Soltis: col. 9, lines 42 – 65, col. 14, lines 33 – 55, col. 19, lines 15 – 34).

13. Regarding **claim 22**, as modified Goldstein discloses the resource comprises at least one of a table and a directory (Soltis: fig. 5).

14. **Claims 6, 9, 23 and 36** are rejected on the same ground as stated in claims 3 and 10 above.

15. Claims 11 – 14, 24 – 27 and 37 - 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldstein et al. (US 4,698,752) in view of Furlani et al. (US 5,995,998), as applied to claims 1, 4 and 7 above, in view of Soltis et al (US 6,493,804) and further in view of Shaughnessy (US 5,555,388).

16. Regarding **claim 11**, as modified Goldstein discloses the relationship is a containment-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Furlani: fig. 2A). As modified Goldstein did not clearly specify the locking comprises write locking the first resource in order to create an instance of the second resource. Nevertheless, the concept can be found from Shaughnessy in which a write locking the first resource in order to create an instance the second resource (col. 10, lines 8 – 12: “Suppose, for example, a user is copying an Orders table. With a write lock in place, other users can concurrently view the table but cannot change the table structure or contents until the lock is lifted ...”. Col. 10, lines 25 - 28). It would have been obvious for one of ordinary skill in the art, at the time the invention was made to incorporate this concept to modified Goldstein to prevent other users from changing the contents of a family of objects (Shaughnessy: col. 9, line 66 – col. 10, line 1).

17. Regarding **claim 12**, as modified Goldstein discloses the relationship is a containment-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Furlani: fig. 2A), wherein the

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locking comprises write locking the first resource and the second resource in order to delete an instance of the second resource (Shaughnessy: col. 9, line 44 – col. 10, line 37).

18. Regarding **claim 13**, as modified Goldstein discloses the relationship is a containment-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Furlani: fig. 2A), wherein the locking comprises read locking the second resource in order to read therefrom (Shaughnessy: col. 9, line 18 – col. 10, line 37 and col. 15, lines 42 - 44).

19. Regarding **claim 14**, as modified Goldstein discloses the relationship is a containment-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Furlani: fig. 2A), wherein the locking comprises write locking the second resource in order to write thereto (Shaughnessy: col. 9, line 18 – col. 10, line 37).

20. **Claims 24 – 27 and 37 - 40** are rejected on the same ground as stated in claims 11 – 14 above.

21. Claims 15 – 20, 28 – 33 and 41 - 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goldstein et al. (US 4,698,752) in view of Furlani et al. (US 5,995,998), as applied to claims 1, 4 and 7 above, in view of Soltis et al (US 6,493,804), and further in view of Annevelink (US 5,448,727).

22. Regarding **claim 15**, as modified Goldstein discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Furlani: fig. 2C and 3). As modified Goldstein did not clearly disclose the locking comprises write locking the first resource in order to delete the first resource. However this concept can be found from Annevelink in which she discloses the reference-based relationship (Annevelink: col. 18, table 4 and fig. 6) and write locking the object in order to delete the object (Annevelink: col. 12, lines 27 – lines 31, lines 42 - 63). It would have been obvious for one of ordinary skill in the art, at the time the invention was made to incorporate this feature to modified Goldstein to improve concurrency access to database.

23. Regarding **claim 16**, as modified Goldstein discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Furlani: fig. 2C and 3), wherein the locking comprises write locking the first resource in order to create an instance of the second resource (Annevelink: col. 18, table 4, fig. 6, col. 11, lines 36 – 52, col. 12, lines 27 – lines 31, lines 42 – 63, col. 13, lines 25 – 46).

24. Regarding **claim 17**, as modified Goldstein discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Furlani: fig. 2C and 3), wherein the locking

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comprises write locking the at least one instance of the first resource in order to delete the second resource (Annevelink: col. 18, table 4, fig. 6, col. 12, lines 27 – lines 31, lines 42 - 63).

25. Regarding **claim 18**, as modified Goldstein discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Furlani: fig. 2C and 3), wherein the locking comprises read locking the first resource and the second resource in order to read the second resource (Annevelink: col. 18, table 4, fig. 6, col. 12, lines 27 – lines 31, lines 42 - 63).

26. Regarding **claim 19**, as modified Goldstein discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource and a second resource, the first resource referencing the second resource (Furlani: fig. 2C and 3), wherein the locking comprises read locking the first and second resource and write locking the second resource in order to write to the second resource (Annevelink: col. 18, table 4, fig. 6, col. 12, lines 27 – lines 31, lines 42 - 63).

27. Regarding **claim 20**, as modified Goldstein discloses the relationship is a reference-based relationship, wherein the at least one resource comprises a first resource, a second resource and a third resource, the first resource and the second resource referencing the third resource (Furlani: fig. 2C and 3), wherein the locking comprises read locking the first and second resource and write locking the third resource in order to write the third resource (Annevelink: col. 18, table 4, fig. 6, col. 12, lines 27 – lines 31, lines 42 - 63).

28. **Claims 28 - 33 and 41 - 46** are rejected on the same ground as stated in claims 15 – 20 above.

Response to Arguments

29. Applicant's arguments filed 8/6/07 have been fully considered but they are not persuasive for the reasons set forth below.

30. Applicant argues that Goldstein or Furlani, either alone or in combination do not describe, teach or suggest "...a determination is made as to whether the relationship between resources is a containment based or a reference based relationship..." (page 11 paragraph 3 and page 12 paragraph 3) and performing a respective lock algorithm based on the determination, the examiner disagrees.

First, the examiner has interpreted what is not a containment-based relationship is a reference-based relationship since all of the nodes in the tree have a relationship to one another except some are included in a root node. In this case, Goldstein clearly discloses the containment-based relationship, which he refers to as "included in", and the reference base relationship, which he refers to as "connected to" (col. 5 lines 3 – 8 and fig. 5). Goldstein explicitly teaches that the invention solves the problem of avoiding locking the entire database while any user is accessing that database, but only the record being actually accessed can be locked out (col. 1 lines 43 – 68). This is achieved with the aid of a locking graph of the resources wherein the locking algorithm simply walks the locking graph from the locking entry

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of the accessed resource to each of its roots and to lock each root (col. 7 lines 1 – 35). This information is used by the database manager to rapidly lock out this record and all other records up to and including the record of interest (col. 7 lines 36 – 41). Roots are defined as entries of the tree that include all other records accessible through that record (col. 7 lines 27 – 30). Therefore, the reference determines that a relationship between resources is an “included in” relationship and locks the resource and its root (other resource) accordingly. Goldstein teaches that resources also have a connected to relationship but does not explicitly define the algorithm for its performance. Furlani disclose an object interrelated decision procedure determines whether the lockable object (object of interest) that will be accessed is interrelated to other objects (thereby corresponding to the included in relationship of Goldstein) or whether it is independent of other objects (corresponding to the connected to relationship of Goldstein). This determination is made by examining the group reference pointer field within the lockable object. If the group reference pointer field value does not contain a pointer to the lock object pointer, the lockable object is independent of other objects in the object collection (col. 8 lines 23 – 51). Therefore, both references detail an operation of performing a determination of the relationship of the resources consistent with the requirement of MPEP 2111, since how applicant perform this determination contrary to the prior art references performance is not fully claimed.

Second, claims 1, 4 and 7 recite the limitation of locking the resources using *another* type of locking strategy. The term *another* according to the dictionary is defined as “one more or more of the same”. Although Goldstein discloses only one locking mechanism to lock the resources, he actually uses a different or another lock to lock the different resources since another lock algorithm can be another implementation of the same algorithm used for the other resource

and its set of roots independent of the other resource that is connected to that resource. This still follows the advantages of Goldstein's teaching in that only a subset of the records of interest is locked. Nevertheless, the combination teaches both another implementation of the same algorithm and a different algorithm as explained below. As outlined above, Goldstein discloses that "include-in" relationship are locked up to their roots without explicitly disclosing what happens to resources having a "connect to" relationship. Furlani discloses two type of locking mechanism based on the objects (resources) relationship. Furlani discloses that a reference lock mutex is first obtain to access the group lock linkages in the object collection. Then an object interrelated decision procedure determines whether the lockable object (object of interest) that will be accessed is interrelated to other objects (corresponding to the connected to relationship of Goldstein) or whether it is independent of other objects (corresponding to the included in relationship of Goldstein). This determination is made by examining the group reference pointer field within the lockable object. If the group reference pointer field value does not contain a pointer to the lock object pointer, the lockable object is independent of other objects in the object collection (col. 8 lines 23 – 51). Independent objects in this case are considered as having reference-based relationship. If the object of interest is independent, then just a mutex lock is performed. If the lockable object is not independent, the process continues to a lock group procedure that acquires the group lock mutex (col. 8 lines 23 – 51). Interrelated objects in this case are considered as having a containment base relationship. If the object of interest is interrelated with other objects, then a group lock mutex is obtained in additional to the reference lock mutex. In summary, Furlani in combination with Goldstein clearly discloses the two type of locking strategies based on whether the objects have a containment based relationship or a

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reference based relationship such as one is just a reference lock mutex if the object is an independent with other objects and another one is a reference lock mutex and a group lock mutex if object is interrelated with other objects. Therefore, the combination's teaching reads on the claims.

Furthermore, the examiner has interpreted the claim language as broadly as possible. It is also the examiner's position that applicant has not yet submitted claims drawn to limitations which define the method and system of applicant's disclosed invention in a manner that distinguishes over the prior art. The examiner thus maintains the previous rejections to applicant's claims with regard to the combination of Goldstein and Furlani.

31. With respect to applicant's remark that "the failure of Goldstein to describe, teach or suggest this aspect of applicants' claimed invention is explicitly admitted in the office action, and therefore, Furlani is relied upon..." (page 12 paragraph 1), the examiner disagrees and responds to the remarks above in refuting the argument.

32. Regarding applicant's argument that "while Furlani describes a group lock and a reference lock, there is no description, teaching, or suggestion in Furlani of determining the type of relationship between one resource and another resource..." (page 12 paragraph 2), the examiner disagrees and responds to the remarks above in refuting the argument.

Conclusion

33. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lilian Vo whose telephone number is 571-272-3774. The examiner can normally be reached on Thursday from 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist at 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lilian Vo
Examiner
Art Unit 2195

lv
October 9, 2007


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